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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/696,626	10/29/2003	Bala Ramachandran	03SKY0003	5553
24504	7590	07/14/2006	EXAMINER	
THOMAS, KAYDEN, HORSTEMEYER & RISLEY, LLP			WONG, LINDA	
100 GALLERIA PARKWAY, NW			ART UNIT	
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ATLANTA, GA 30339-5948			2611	

DATE MAILED: 07/14/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

10/696,626

Examiner

Linda Wong

Applicant(s)

RAMACHANDRAN ET AL.

Art Unit

2611

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
  - If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
  - Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 02 May 2006.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-33 is/are pending in the application.
- 4a) ☐ Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-33 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 28 April 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a). Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
- 4) ☐ Paper No(s)/Mail Date \_\_\_\_\_.

- 4) ☒ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

## DETAILED ACTION

### *Claim Rejections - 35 USC § 103*

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

1. **Claims 1-11,14-27** are rejected under 35 U.S.C. 103(a) as being unpatentable over Isberg et al (US Patent No.: 6029052) in view of Rahman et al (US Patent No.: 6560447).
  - a. **Claim 1**, Isberg et al discloses receiving a signal (Fig. 2, label 10) comprising converting a first signal based on a first system (Fig. 5, label GSM) to a first baseband signal (Fig. 2, label 44), converting a second signal based on a second system (Fig. 5, label DCS) to a second baseband signal (Fig. 2, label 44), processing the first baseband signal using baseband components (Fig. 2, labels 44) and processing the second baseband signal using the baseband components (Fig. 2, label 44), wherein processing the first baseband signal and second baseband signal comprises filtering by selecting or programmable bandwidth of the filter (Fig. 2, labels 42a, 42b, Col. 3, lines 48-50, lines 63-67, and Col. 4, lines 1-3). Although Isberg et al fails to disclose DC offset correcting by selecting or providing a programmable bandwidth, Rahman et al discloses a programmable DC offset correction circuit with an adjustable or selective bandwidth based on the frequency or bandwidth of the signal being

- processed. (Col. 4, lines 36-67 and Col. 5, lines 1-15, lines 58-67 and Col. 6, lines 1-4 and Fig. 3, Fig. 2, labels 68 and 56) It would be obvious to one skilled in the art to incorporate DC offset correction as disclosed by Rahman et al into Isberg et al's conventional baseband processing circuitry with direct conversion to "improve the selectivity of the receiver and reduce the adjacent channel interference". (Rahman et al, Col. 1, lines 33-35, lines 55-59 and Isberg et al, Col. 3, lines 50-57)
- b. **Claim 2, 14, 22**, Isberg et al discloses a multi-mode receiver for processing baseband signals of global System for Mobile Communication (GSM), Personal Communication Systems (PCS) and Digital Communication Systems (DCS). (Fig. 5, labels GSM, DCS, and PCS)
  - c. **Claims 3,23**, Rahman et al discloses at least one filter (Fig. 2, label 65), digital to analog conversion (Fig. 2, label 70), analog to digital conversion (Fig. 2, label 66), and sampling (Fig. 2, label 66) and correcting for DC offset (Fig. 2, label 68).
  - d. **Claims 4,24**, Rahman et al discloses processing at least one of a digital domain (Fig. 2, labels 66 and 68) and an analog domain (Fig. 2, labels 70,64 and 65).
  - e. **Claims 5, 16, 25**, Isberg et al disclose a multi-mode receiver that processes modes at different frequencies, wherein each mode inherently has different frequency response characteristics. (Fig. 5, labels GSM, DCS, and PCS)
  - f. **Claims 6,7,10,15,17,19**, Rahman et al discloses at least one DC-offset correction (Fig. 2, label 68), an anti-aliasing filter which inherently can act as a

- low pass or FIR or all pass filter or decimating filter or smoothing filter (Fig. 2, label 65), analog to digital converter (Fig. 2, label 66), digital to analog converter (Fig. 2, label 70), variable gain amplifier (Fig. 2, label 78 and Col. 3, lines 20-22).
- g. **Claims 8,20**, Isberg et al discloses a plurality of systems and inherently, discloses receiving a plurality of signals since the receivers continuously receives signals produced from any of the types of systems. (Fig. 2)
  - h. **Claims 9,18,26**, Rahman et al discloses an analog to digital converter, which comprises "N bits of digital resolution". (Col. 3, lines 39-42) Providing a sampling rate determined by the frequency or bandwidth of the signal being received would be inherent in order for the sampler or analog to digital converter to comply with Nyquist's Theorem.
  - i. **Claim 11** inherits all the limitations of claim 1.
  - j. **Claim 21** inherits all the limitations of claim 1, but claim 1 does not recite a means for transmitting and receiving. Isberg et al discloses a means for transmitting and receiving. (Fig. 5, label 10)
  - k. **Claim 27** inherits all the limitations of claims 21 and 20.
2. **Claims 12 and 13** are rejected under 35 U.S.C. 103(a) as being unpatentable over Isberg et al (US Patent No.: 6029052) in view of Rahman et al (US Patent No.: 6560447) and further in view of Robinett (US Publication No.: 20020193108).

- a. **Claims 12 and 13**, Although Isberg et al and Rahman et al does not teach two down-converters, Robinett discloses a multi-mode transceiver comprising a baseband processor (Fig. 3A-2, label 310), wherein two down-converters (Fig. 3A-2, labels 442 and 446), with different sampling rates (Fig. 3A-2, labels 444a and 444b) are within the baseband processor. It would be obvious to one skilled in the art to use a down-converter to lower the sampling rate and increase the frequency.

***Claim Rejections - 35 USC § 102***

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. **Claim 28** is ejected under 35 U.S.C. 102(b) as being anticipated by Isberg et al (US Patent No: 6029052).
  - a. **Claim 28**, Isberg et al discloses a multiple mode receiver comprising receiving first signals from a first type of communication system having a common baseband system (Fig. 2, labels 10,30 and 44 and Col.1, lines 28-40, Col. 2, lines 13-26, lines 64-67, Col. 3, lines 1-9), receiving second signals from a second type of communication system that shares the common baseband system with the first type of communication system (Fig. 2, labels 10,30,44, Col. 1, lines 28-40, Col. 2, lines 13-26, lines 64-67, Col. 3, lines 1-9). Isberg et al discloses a list of types of communication system includes CDMA, personal communication services, digital communication system. (Col. 1, lines 28-40) Although digital broadcast system is not included in the list of types of

communication systems, Isberg et al discloses a multiple mode receiver, thus it is inherent for such a system to be able to receive signals from a digital broadcast system, wherein the band is selected by the band selector shown in Fig. 2, label 30 and processed by the same common baseband shown in Fig. 2, label 44 as other communication system signals.

***Claim Rejections - 35 USC § 103***

4. **Claims 29-33** are rejected under 35 U.S.C. 103(a) as being unpatentable over Isberg et al (US Patent No.: 6029052) in view of Rahman et al (US Patent No.: 6560447).
- a. **Claims 29, 31** inherit all the limitations of claims 6,7,10,15,17,19.
  - b. **Claim 30** inherits all the limitations of claims 1 and 7.
  - c. **Claims 32 and 33** inherit all the limitations of 7 and 10. Although Isberg et al does not disclose using varying sampling rates, the systems disclosed by Isberg et al are multi-mode systems, it is inherent that the sampling rates used are different and the frequency response would be different for each of the systems.

***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Linda Wong whose telephone number is 571-272-6044. The examiner can normally be reached on 9-5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Chieh Fan can be reached on (571) 272-3042. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 2611

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Linda Wong

P. **KEVIN KIM**  
**PATENT EXAMINER**  
*K. Kim*